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**MANEUVER WARFARE: EMPLOYMENT OF MARINE CORPS COMBAT ENGINEERS
ON THE FORWARD EDGE OF THE BATTLE AREA (FEBA)**

INDIVIDUAL ESSAY

by

**Lieutenant Colonel Jerry C. Black
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**US Army War College
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17 April 1984**

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**MANEUVER WARFARE: EMPLOYMENT OF MARINE CORPS COMBAT ENGINEERS
ON THE FORWARD EDGE OF THE BATTLE AREA (FEBA)**

"The primary purpose of our armies is peace, not war—to make certain that they will never have to be used—to deter all wars, general or limited, nuclear or conventional, large or small—to convince all potential aggressors that any attack would be futile."

JOHN F. KENNEDY

INTRODUCTION

The United States will deploy Marine Corps Air Ground Task Forces (MAGTF) on a global basis as an instrument of national policy. These amphibious forces are capable of rapidly responding to a spectrum of crises ranging from a show of force to combat operations.

This essay examines maneuver warfare and offers alternative concepts for the employment of combat engineers in support of the MAGTF Commander. This commander will be charged with orchestrating all aspects of combat power during offensive and defensive operations.

Several topics not clearly defined in existing doctrine will be examined in this study. No attempt is made to change existing doctrine. Likewise, there is no attempt to specify the size of the maneuver force; this decision is left to the discretion of the planners and commanders.

The role of the combat engineer in support of the ground maneuver force is emphasized. Conversely, the employment of aircraft, armor, antisir, electronics, and aerial reconnaissance during operations are considered only in passing. Doctrinal principles for these supporting assets are valid .

Maneuver Warfare Concepts

What is "maneuver warfare"? Marine Corps doctrine states "that the object of maneuver is to dispose forces in such a manner as to place the enemy at a disadvantage and thus achieve results which would otherwise be more costly in men and material." The concept of maneuver warfare in the context of this essay lies in the ability of the MAGTF commander to create, magnify, or exploit ambivalence, deception, and rapid offensive maneuvering. Maneuver warfare requires that commanders be able to assess changing circumstances and move rapidly to take advantage of them. Such warfare calls for an effective and flexible command structure, mobile forces, and a doctrine that emphasizes the exploitation of enemy weaknesses.

The MAGTF commander's prospect of facing a massive ground attack under unfavorable conditions of terrain and force ratio is real. Even so, his task is to protect his command and accomplish his mission. His forces must be capable of engaging the enemy with sufficient intensity on favorable terrain to cause the enemy to delay, abandon the attack, or accept defeat. Combat engineers should be employed forward to assist the MAGTF commander in disrupting the enemy's movement and limiting his ability to mass large numbers of armored vehicles and combat troops.

Disruption and delay should be considered as meaningful objectives. Destruction of vehicles, supplies, point targets and delay of forces in the enemy's rear area will contribute to a dilution of his available combat power. The targeting of rear areas should be directed toward the broader effects of disruption of which discrete destruction is a part. This type of targeting provides an opportunity for the deployment of a variety of lie-in-wait munitions. The Family of Scatterable Mines

(FASCAM) provide that capability. Scatterable mines provide lethality against armored and personnel targets with characteristics complementary to immediate effects weapons.

Mine effectiveness is measured by two criteria: disruption and attrition. These effects are not easily quantifiable, but the following data on armored vehicles destroyed in past conflicts provides some insight. Table 1 indicates that about one-quarter of all armor casualties in World War II resulted from mine encounters. Table 2 breaks out World War II data by theater and adds data from the conflicts in Korea and Vietnam. The marked differences between environments in the more recent conflicts and that in Western Europe account for some of the dramatic increase in effectiveness of mines.

Table 1

ARMOR CASUALTIES IN WORLD WAR II BY CAUSE¹

<u>Kill Agent</u>	<u>Percent</u>
Artillery and antitank weapons..	59.8
Mines.....	23.7
Bazookas.....	17.0
Miscellaneous.....	0.5
Total.....	100.0

Table 2

ALLIES TANK LOSSES TO MINES AS A PERCENTAGE²
OF LOSSES TO ALL ENEMY ACTION

<u>Theater</u>	<u>Percent</u>
North Africa, 1942-43.....	18
Western Europe, 1944-45.....	23
Italy, 1943-45.....	28
Pacific, 1944-45.....	34
Korea, 1950-51.....	56
Vietnam, 1967-69.....	69

A classic example of mines as a moderator of adverse force relationships is seen in the case of Rommel versus Montgomery at Alamein. (See Fig. 1.) Rommel, on the short end of the combat ratio, used almost one-half million hand-emplaced mines in his defense. About 300,000 of these were antitank mines placed about one per meter of front in this 35 to 40 mile gap. It took a vastly superior British force 12 days to break through—and Montgomery almost gave up the attack.³

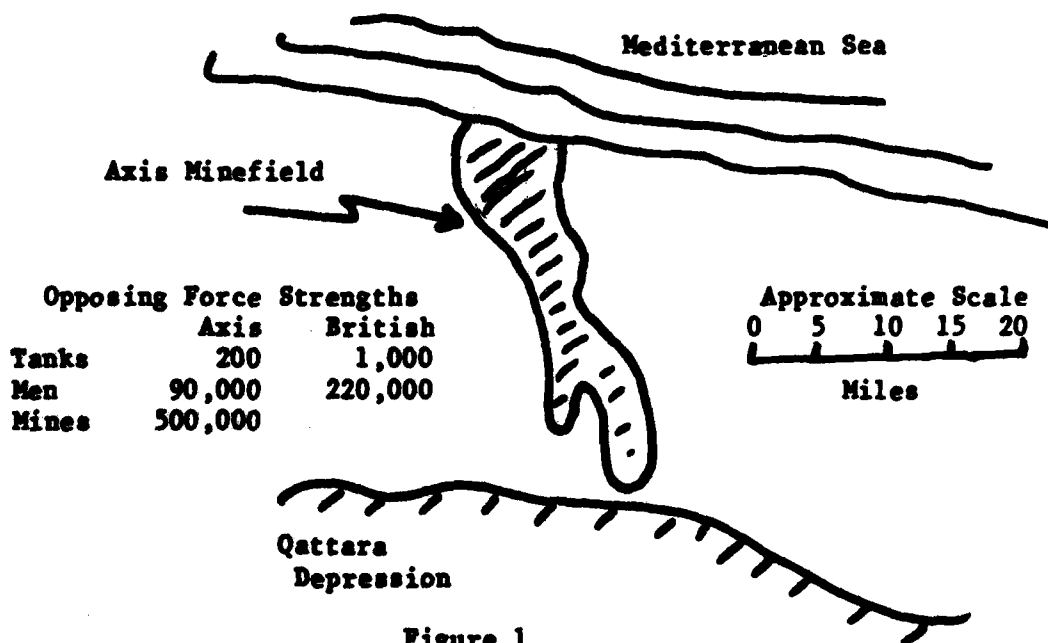


Figure 1

Second battle of Alamein, 23 October 1942⁴

These examples provide an appreciation of the destructive potential of land mines. The effective employment of scatterable mines is coming under increasing examination as a combat multiplier. Scatterable mines can be emplaced by artillery, aircraft, or by the combat engineers.

It required over 100,000 man-hours to plant the minefield at Alamein. By contrast, Haiphong harbor was mined by Marine Corps aircraft in about 18 minutes. Modern technology is increasing in the utility of mine weapons.

CHAPTER I

OPERATIONS WITHIN FORCE BEACHHEAD (FBH) AREA

General Activities

This chapter deals with the Naval Task Forces conducting an amphibious operation within the amphibious objective area (AOA) to establish or seize a force beachhead (FBH) for follow-on forces. Logistical support requirements will not be addressed, since the current system is valid and requires no modification or expansion.

Principal Events

A. When an amphibious task force conducts operations in an area without readily deployable strategic reserves or follow-on forces, the sustainment of that force's combat effectiveness is essential. Missions to land at all costs or to hold at all costs must be the exception rather than the rule. An amphibious task force must maximize its tactical and strategic seaborne flexibility to avoid engagement which would result in unacceptable attrition or possible annihilation. The force's capability to avoid presenting a fixed target, to expeditiously withdraw and reenter an area at will, and to shift combat power presents serious problems to the enemy. If the enemy masses forces in one place, then other areas may be sparsely defended. Amphibious forces possess an inherent flexibility and are capable of exploiting such an advantage.

B. Amphibious operations call for ultimately phasing ashore command and control, combat support, and combat service support capabilities to execute the land battle. When phasing ashore has been completed, the

amphibious operation is normally terminated. Command passes ashore, and the Navy departs the amphibious objective area (AOA). However, in conducting an independent operation, planners must consider the continuation of the amphibious operation until the landing force accomplishes its mission and withdraws. Such operational continuation will allow more flexibility in phasing ashore than does the traditional concept.

Whether establishing or seizing a force beachhead (FBH), the following principles should be considered :

- o Land the most mobile combat units early in the operation.
- o Seize the initial objectives with the mobile forces.
- o Plan for an immediate exit from the beach.

Discussion of Maneuver Operations

These principles are best illustrated when placed in the context of an operational model. The only option available in this model is seizing a FBH to facilitate follow-on forces.

Assuming that an amphibious assault will only be prosecuted when and where success is reasonably attainable, planners must consider the opponent's capability to rapidly reinforce existing defensive forces. Therefore, the assault echelon must be task organized to ensure maximum combat power and maneuver capability immediately upon landing. In order to offset the enemy's capability to reinforce, the Amphibious Assault Element (AAE) must land and move through the beach area immediately to attack the initial objectives; the AAE must gain control of the enemy's avenues of approach to stop reinforcements or blunt counterattacks.

These tasks can be accomplished by integrating the ground reconnaissance elements and combat engineers into a "Deep Strike Company"

(DSC) prior to D-Day. Elements of the DSC would execute a clandestine insertion on D-1 or D-2 with the primary mission of conducting covert operations to support the rapid movement of forces inland and delay enemy movement or deny enemy reinforcements. Specific responsibilities for the DSC include but are not limited to the following:

- o Locating and identifying the size and type of enemy forces within the FBH.
- o Identifying all natural and enemy prepared obstacles.
- o Determining the most suitable area for employment of both antipersonnel and antitank mines.

The DSC is organized into Deep Strike Engineer teams (DSET) that will vary in size from 4 to 12 men. Several DSET teams will be increased by combat engineer personnel who have the mission of conducting route, bridge, and obstacle reconnaissance. The intelligence gathered from these reconnaissance efforts will enhance the ground combat element's scheme of maneuver. These teams will also create and identify obstacles which can be used to restrict the enemy's mobility and reduce his capability to counter the movement of the amphibious assault element. For example, these teams may place mines on specific roads and prepare bridges for demolition during the assault phase. These DSC elements should be assigned to conduct deep and near reconnaissance as well as support close-in reconnaissance by infantry units.

DSCs and DSETs would be trained to identify priority targets in the overall targeting plan. In principle, their mission is to assist in destroying the enemy's cohesiveness and alter the terrain within the FBH area for the conduct of follow-on operations.

Engineer Concepts

A few simple concepts should govern employment of combat engineers. These concepts allow for deployment of combat engineers to enhance the maneuver force's inland thrust, to conduct countermobility operations to slow the defender, to clear obstacles, to identify gap closure requirements, and to exploit mine and landmine countermeasure capabilities.

Principles of Engineer Employment

A. Combat engineer units must be as mobile as the specific force they are supporting on the forward line of own troops (FLOT). This mobility is essential to support the activities of the DSCs and DSETs.

B. While the combat engineers are working in front of the friendly advancing force, they are performing battlefield tasks--contributing to mobility, countermobility, and survivability. Mobility means clearing the way for movement and maneuver. It includes breaching minefields, overcoming obstacles, and crossing dry and wet gaps. Countermobility may include obstacle construction in the front as well as on the flanks of the maneuvering force. This support also extends to impeding or delaying enemy counterattacks during the reorganization phase following the securing of an objective.

C. Survivability during the offense is supported by combat engineers employing protective measures which will decrease the lethality of the enemy's firepower while the maneuver force advances toward the enemy. This is accomplished by use of camouflage, deception, and smoke. Visual deception and construction of decoys may well support the advancing maneuver forces.⁵

D. Employ the combat engineer units well forward of the FEBA.

The engineers must be trained to work in conjunction with all units of the maneuver force. The combat engineers will be able to provide information from the front line to the FEBA on such key issues as terrain, roads, and bridges. With such information, commanders may employ obstacles to halt, canalize, or reduce the enemy's capability to conduct a counterattack.⁶

E. The commander of the deep strike engineer company must be located with the forward headquarters of the support unit. The DSC commander should be placed with the maneuver force "Bravo" command group as the alternate S-2. The DSC leader assigned to operate on the FEBA should be placed on the MAGTF's intelligence net. This arrangement will streamline the command operation center (COC) and require coordination and communication between units, S-2s, DSCs, and DSETs. This type of coordination and communication will allow the combat engineers, at the discretion of the commander, to plan for and emplace the entire array of scatterable mines and demolitions.

F. The DSC will be able to deploy with any size maneuver unit, including helicopter missions deep into the enemy's rear battle area. The capability for the combat engineers to operate forward of the troops with mines and equipment is a reality of today's modern warfare and is logistically supportable. When the DSC is employed it will be able to provide forward area protection for the maneuver forces and alter the terrain of the battlefield by the employment of scatterable mines. The DSC concept provides the deep and near reconnaissance capabilities needed to support the MAGTF commander engaged in maneuver warfare.

Employment of Scatterable Mines

Once the MAGTF has been established ashore, provisions for an adequate perimeter defense to support either offensive or defensive operations become paramount. This task can be accomplished by using the full capabilities of the DSC. By working from the front of the battle area to the rear (that is forward of the FLOT) the DSC is still within the protective span of friendly artillery and small arms fires.⁷

The employment of conventional minefields requires considerable time, manpower, and--most important--logistical support. Conventional mines are primarily used defensively as barriers to prevent the enemy from penetrating a position under control of friendly forces, in a canalization role to force an advancing unit into a particular area, to delay an advancing enemy force, and or to provide hasty close-in protection.⁸ The average infantry company, for example, requires eight hours to emplace conventional mines in a 250x350 meter minefield. An artillery battery using 155mm projectiles loaded with antipersonnel or antitank mines can complete the same task in a matter of minutes, as can aircraft. The older conventional mines are bulky, easily detected, and manpower intense. They remained in place until removed or detonated by the enemy or intentionally detonated by friendly forces.

Because of their small size, weight, countermeasure resistance, reliability, and self-destruct features, scatterable mines have fewer of the limitations or disadvantages of conventional mines. The following chart (figure 2) provides a comparison of mine options in a typical 250x350 meter minefield using the Remote Antiarmor Mine System (RAAMS) and Area Denial Artillery Munition (ADAM) 155mm projectile--both munitions available in the existing inventory.

	<u>Conventional/Mines</u>	<u>RAAMS/ADAM</u>
Performance	Yes	No/temporary
Countermeasure Resistance	Yes with boobytrap	Yes
Self-Destruct	No	Yes
Logistic Man-Hour Consideration	1000	.1
Tonnage	44 Tons	1 Ton
Trucks	8-5 Ton	Carried with basic load

Figure 2

Comparison of minefield options for 250x350 meter minefield⁹

There are three basic roles for the employment of scatterable mines in support of the commander's concept of operation:

- o Provide a system for planned minefield support of any barrier or obstacle plan.
- o Establish a minefield in front of or on top of targets of opportunity.
- o Use as a harassing agent in connection with other munitions, HE, smoke, or dual purpose.¹⁰

Since it is the intention of the MAGTF commander to move inland from the amphibious landing site, any scatterable mines employed must have the capability of serving a defensive or offensive role. Figure 3 (page 15) depicts scatterable mine minefields being used for the closing of gaps and lanes in support of other natural obstacles. These mines allow for total closure of passing lanes for enemy forces after friendly forces have passed through or retrograded in designated gaps.¹¹

The following examples show scatterable mines employed to delay or disrupt movement of an enemy force. Yet at the discretion of the commander these scatterable mines can be used to his advantage in support of movement within or out of the FBH. Figure 4 (page 15) shows how mines employed in the path of the enemy cause him to conduct breaching operations or "force through" the minefield, to accept casualties, or to seek other avenues of advancement.¹²

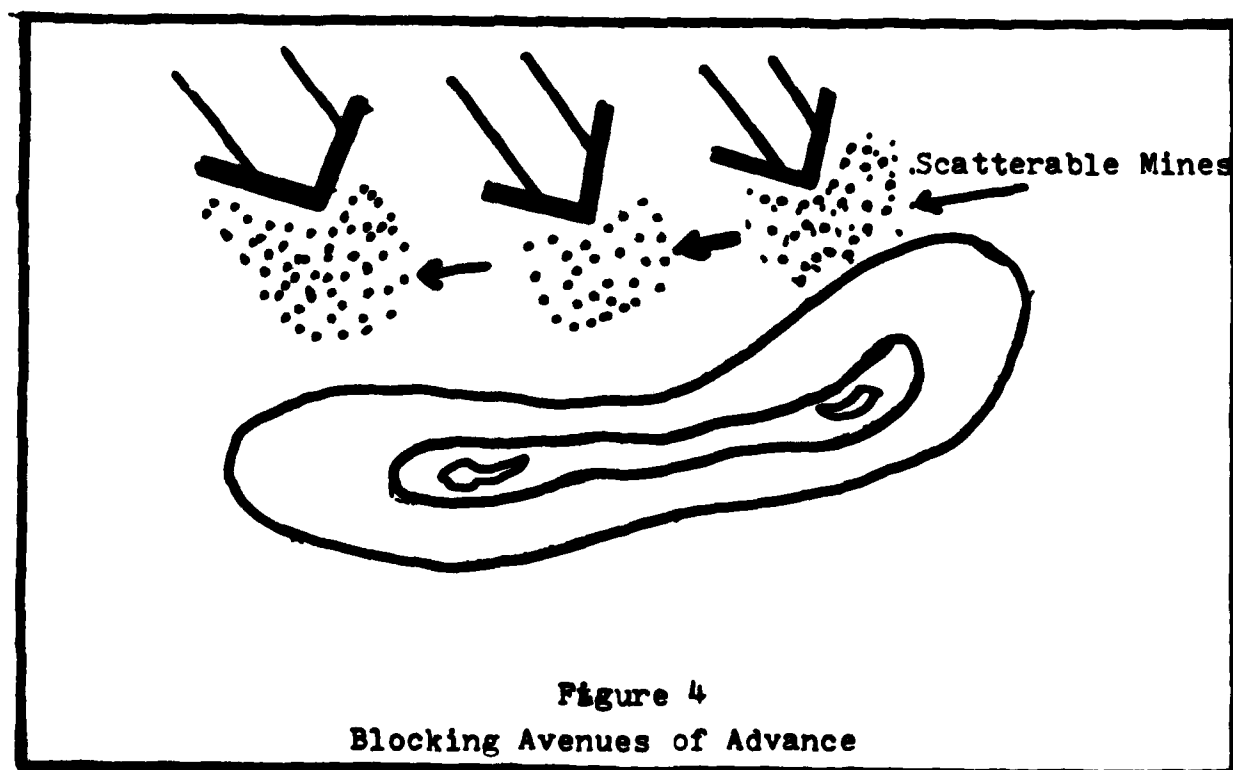
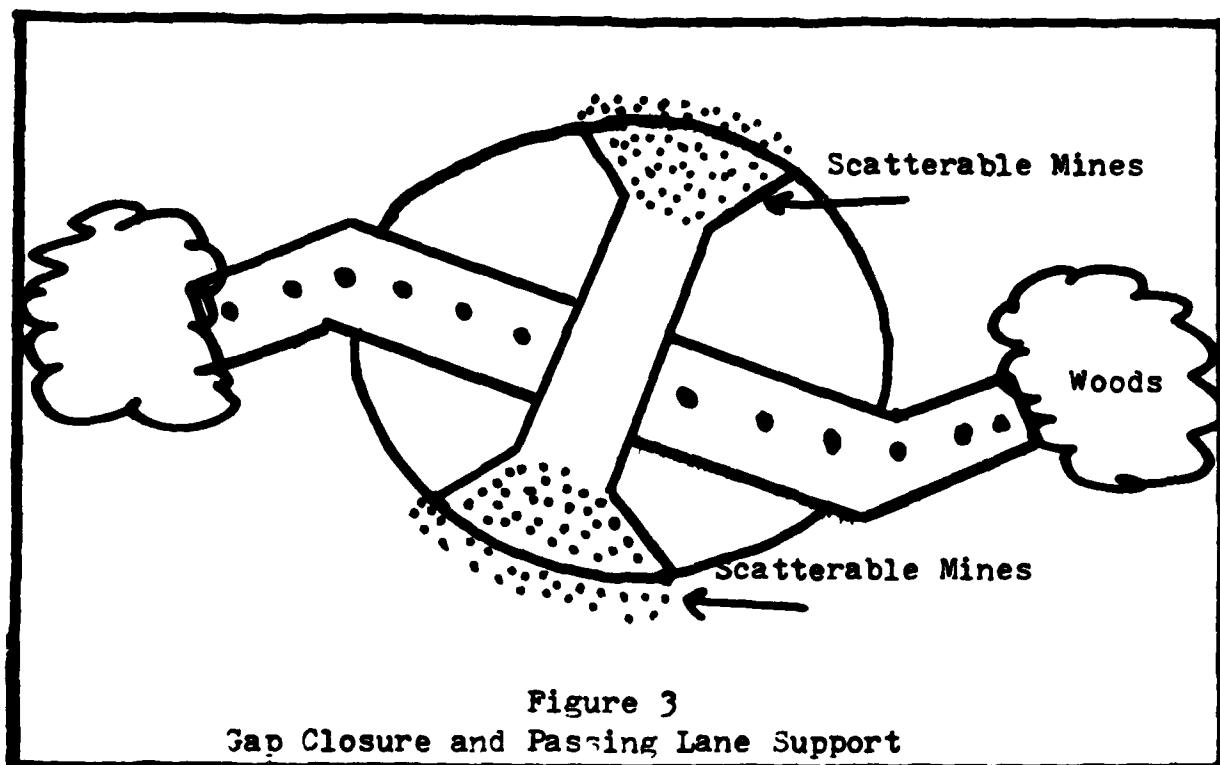
Figure 5 (page 16) outlines how scatterable mines can be employed at logical ford points and snorkel sites to create defensive "bottle-necks". This situation provides a lucrative target for the maneuver force's fire support systems and small arms covering fires.¹³

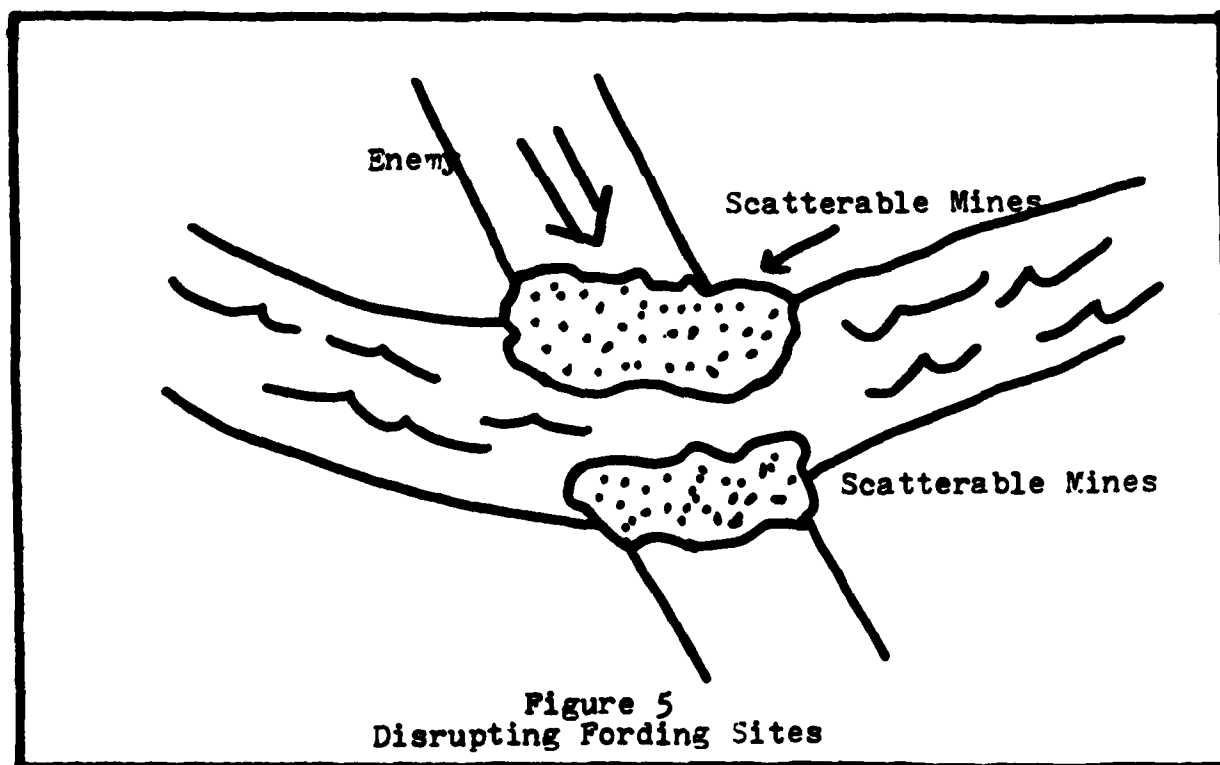
These examples depicting the capabilities of scatterable mine employment make it apparent that their greatest limitation may simply be the flexibility or ingenuity of the commander. When commanders employ scatterable mines, they should stress and adhere to these existing doctrinal concepts:

(1) Covering fire. Minefields are considered most effective when covered by preplanned ground fire. This coverage provides additional time to place artillery fires on vehicles as they stop, slow down, or maneuver to avoid the mines. This covering fire complements other countermeasure activity. In this sense, scatterable mines are a force multiplier and any destruction that they cause is considered a bonus.¹⁴

(2) Delivery accuracy. Depending on the estimate of the tactical situation, scatterable mines can be placed close to friendly troops. When mines are employed close to friendly troops detail coordination is imperative to avoid the loss of friendly troops.

The logic of these basic requirements of mining near friendly troops in tactical situations is understandable, but such restrictions should not inhibit the option of mining. For example, decreased emphasis upon precise mine emplacement (at some distance from friendly troops) would permit the use of less accurate delivery boundaries, at the same time exploiting the lie-in-wait munition and area coverage characteristics of scatterable mines. Also important are the all-weather delivery possibilities which are improved by a lower requirement for precise and timely target location. Similarly, using mines with self-destruct capabilities some distance beyond the (FLOT) would reduce the requirement for individual mine recording procedures. Such a doctrinal revision would not create chaos in the use of mines; rather, it enhances the MAGTF commander's flexibility on the battlefield.





CHAPTER II

OFFENSIVE OPERATIONS

General Activities

This chapter discusses principles of mine employment for maneuver forces in offensive combat operations. Various Fleet Marine Force Manuals, Army Field Manuals, and similar doctrinal material from other countries cover specific techniques of tactical mine employment. This chapter neither attempts to recommend certain specific tactics nor categorically reject others. The MAGTF commander must flexibly employ his forces and emplace mines to support his scheme of maneuver.

Principal Events

A. The mission of the maneuver force is to destroy the enemy and his capability to function as an effective fighting force. This mission can best be accomplished through the application of mass and maneuver rather than through firepower attrition. The enemy's combined arms force must be fragmented or destroyed by engaging a predetermined target priority list. The sequence in which these tasks are accomplished and the specific targets attacked will vary based upon given situations.

B. The primary objective of the MAGTF's use of firepower and mobility is the destruction of the enemy's combat cohesiveness. On the future battlefield, commanders may face an enemy possessing numerical superiority, excellent force mobility, and an abundance of firepower. It will not be necessary to defeat this force by attrition to succeed in

battle. The objective must be the deliberate breakdown of the enemy's ability to function as a total force. To achieve this objective, clear priorities of engagement must be established.¹⁵

(1) The first priority should be given to the enemy's air defense units. Traditionally, our air elements have enjoyed considerable freedom of movement in support of ground forces. On the future battlefield, this condition is highly unlikely where the enemy's air defense is established. Enemy air defense systems can either be stationary or mobile. Limitations on the use of air assets deprive the ground forces of an essential weapon in dealing with the enemy's ground force. Loss of or even slight degradation of friendly close air support magnifies the already existing shortfalls in ground mobility and armor assets with which to fight Warsaw Pact forces.

(2) The second priority of engagement should be the enemy's command and control elements. These should be engaged by air, artillery, ground, and Electronic Warfare (EW) assets during the early stages of the engagement. A thorough knowledge of the enemy's doctrine will greatly assist the MAGTF commander in locating these elements.

(3) The third priority of engagement should be to separate the enemy's infantry from his armored vehicles--tanks and armored personnel carriers. Once such separation is accomplished, the enemy is more vulnerable to air, tank, artillery, and infantry attacks.

(4) The fourth priority of engagement should be the enemy's Combat Service Support Elements (CSSE). Soviet operations are typified by large mechanized forces moving at fast speeds over great distances. Destruction of or disruption of the enemy's logistical support tail will in time render such assault elements ineffective.¹⁶

C. The overall objective of these engagements is to confront the enemy with a series of threats which are increasingly more threatening, less predictable, and more destructive. Once the enemy is exposed to the full array of battlefield weapons, he will be required to make more tactical decisions on specific threats and potential problems than ever before.

D. The MAGTF commander must avoid stereotype operations; rather, he should exercise flexibility and innovation in executing his offensive combat maneuvers. An enemy who is faced with the possibility of night and day attacks, surprise raids, and rapid thrusts from all directions will be easier to deal with than one who can predict his opposing commander's actions.

E. The MAGTF commander must remain offensively oriented to attain maximum results. The battlefield of the future will reward the commander who maintains the initiative, exercises flexibility, makes use of the terrain, and employs maneuver warfare within his battlefield plans.¹⁷

Discussion of Maneuver Operations

In principle, the MAGTF commander must emphasize application of strength against weakness. For example, if the enemy's strength is his artillery, the commander may employ his artillery against the enemy's AAA and then employ friendly aircraft to attack the enemy's artillery.

The commander must consistently orchestrate his combat power to achieve surprise and gain combat superiority at the desired time and place. He must capitalize on the capabilities of available helicopter-borne units for mobility and rapid insertion of his forces. These

heloborne forces should be employed in favorable terrain to create and exploit opportunities by deception or maneuver that will support the MAGTF commander's main attack.

The MAGTF commander, through the use of maneuver warfare in offensive operations, should attempt to create and control chaos on the battlefield. This battlefield chaos should be viewed as the rule, rather than the exception.¹⁸

What sort of tasks in maneuver warfare must be accomplished to upset the enemy's equilibrium in offensive operations? According to the Israeli General Yadin, three tasks must be accomplished:

First, cut the enemy's line of communication thus paralyzing his physical buildup. Second, seal him off from his lines of retreat, thus undermining his will and destroying his morale. Last, hit his centers of administration and disrupt his (tactical) communication thus severing the link between his brain and his limbs.¹⁹

The US Army's FM 100-5 (Operations), considered to be the capstone publication for US prosecution of maneuver warfare campaigns, advises :

Maneuver is an essential element of combat power. It contributes significantly to sustaining the initiative, to exploiting success, to preserving freedom of action, and to reducing vulnerability. The object of maneuver is to concentrate or to disperse forces in a manner designed to place the enemy at a disadvantage, thus achieving results that would otherwise be more costly in men and material. At all levels successful application of this principle requires not only fire and movement, but also flexibility of thought, plans, and operations and considerable application of the principle of mass and economy of force.²⁰

These tasks make it is clear that firepower is a part of maneuver warfare--but not by any means its sole asset. Maneuver forces must also fight in depth and not rely primarily on the retention of key terrain.

Engineer Concept

In offensive operations the combat engineers through the DSCs and DSETs provide the forward reconnaissance element for the MAGTF. For the MAGTF to fight and win, it must move decisively on the battlefield. Combat engineers will contribute to this effort by concentrating on the enhancement of mobility and countermobility measures.

Principles of Engineer Employments

A. The commander must ensure the mobility of the MAGTF by reducing the effects of obstacles. The engineer's top-priority in the offense is to bypass or eliminate obstacles located in the path of advancing units. Other tasks combat engineers must perform to ensure mobility include:

- o Neutralizing and breaching obstacle minefields.
- o Crossing natural gaps.
- o Assisting in the assault on strong points.
- o Maintaining combat roads and trails.
- o Developing deep reconnaissance information.²¹

B. Combat engineers must conduct deep reconnaissance to support the early movement of the maneuver force. This reconnaissance provides the engineer staff with early, reliable engineer intelligence on the terrain over which the maneuver force is to advance. Each route that is considered a likely avenue of movement should be thoroughly examined for serviceability, type, condition, location of critical points, mines, and condition of bridges. Once this information is gathered, it should be forwarded to higher headquarters to be used in conjunction with aerial and mapping photographic studies, as well as with terrain studies.

C. It is essential that this reconnaissance effort be made prior to movement of the maneuver force or in the earliest stages of movement. This information provides the estimates for the DSC's and DSET's supplies and equipment. But more importantly it allows the MAGTF commander to select maneuver routes to support his troop movement, traffic control, and tactical check points.

Employment of Scatterable Mines

Inherent in maneuver warfare is the ability of the MAGTF commander to enjoy freedom of action in the movement of his tactical units. He must have sufficient mobility to move his forces by various means over varying types of terrain at the time and place of his choosing. Simultaneously, he must be able to exercise mobility, countermobility and survivability to prevent or restrict the movement of enemy forces. To assist with these tasks, the combat engineers will be required to employ scatterable mines in an offensive mode.

This essay makes no attempt to revise existing mine warfare doctrine to fit new mine warfare material capabilities or devise concepts that exploit current technology. However, existing scatterable mine employment techniques will be reviewed as they are essential to maneuver warfare.

(1) Mix of Systems. The Warsaw Pact countermine capability appears to be designed for use against current conventional mines and existing employment doctrine. Mines with wide areas of effects, such as a mix of Remote Antiarmor Mine Systems (RAAMS) and Area Denial Artillery Munition (ADAM) make a minefield viable without intense covering fire. An example of employing RAAMS and ADAM in the offense without interfering with the scheme of maneuver is shown in figure 6 (page 25). In

addition to the artillery emplacement of RAAMS and ADAM munitions, other types of system mixes of scatterable mines and emplacement techniques include:

(a) M56 Antitank Helicopter Mine Dispensing System. The entire system is mounted on a helicopter and mines are ejected and armed on groundcontact. Density is determined by dispensing rate and aircraft speed.

(b) Gator is an air-delivered mine system that dispenses AP and AT mines from tactical and strategic aircraft. These mines have self-destruct and magnetic fused characteristics.

(c) The Modular Pack Mine System (MOPMS) is a compact, easily portable unit which discharges 21 AT or AP mines in a 35 meter semicircle. Each mine has a trip-wire which if disturbed detonates a fragmentary kill mechanism.²²

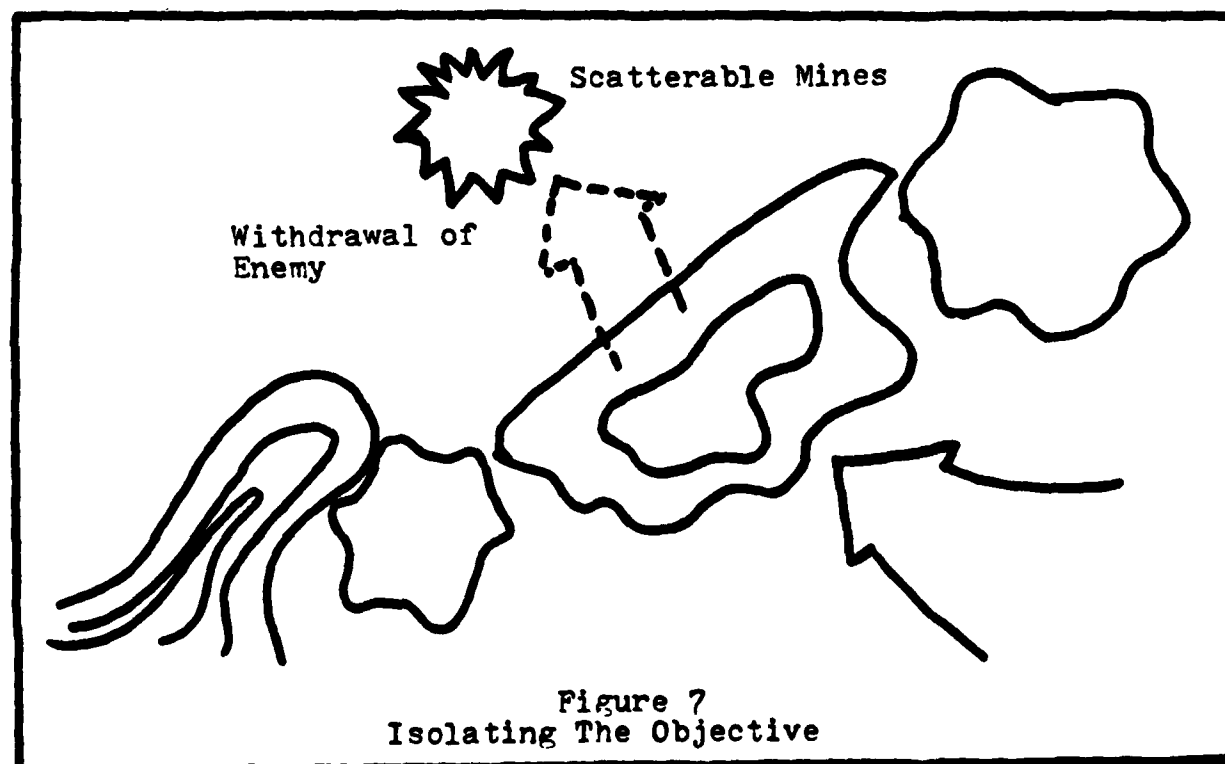
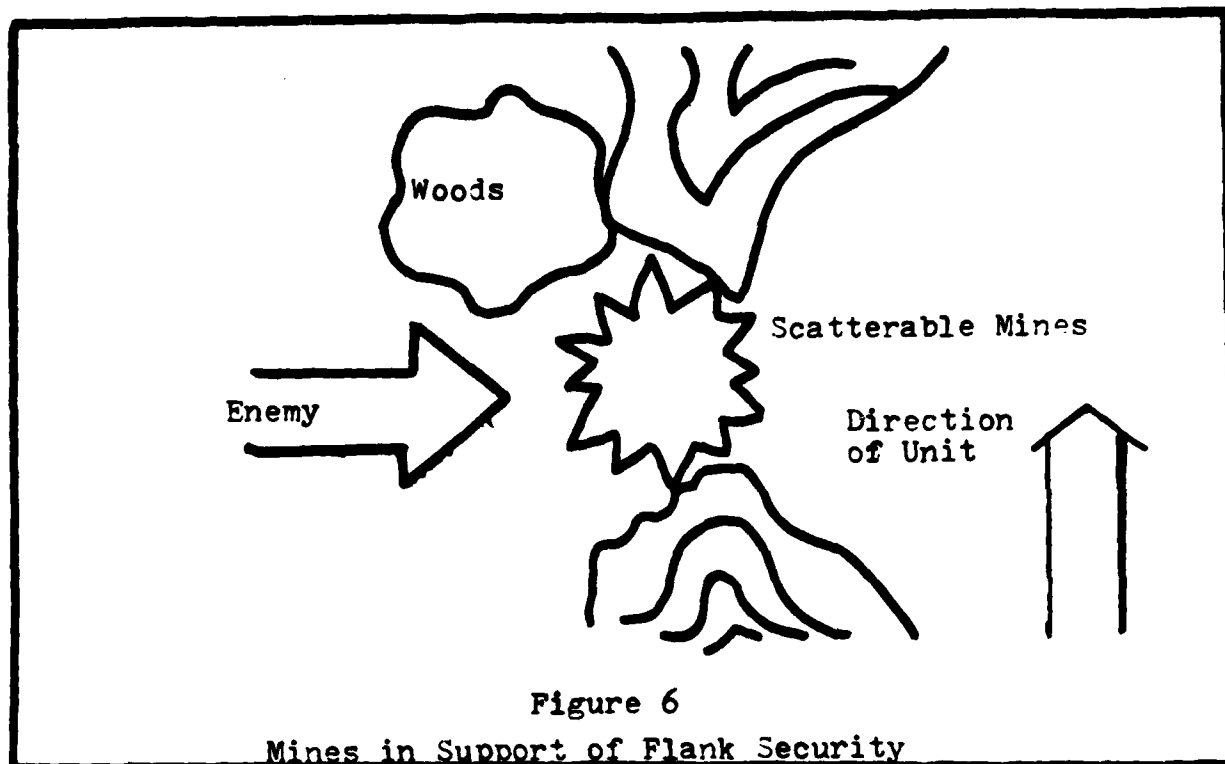
(2) Area employment. The attacker's tactical rear area offers an opportunity to spread the threat of mines into places normally considered to be relatively safe. Widespread, low density mining with some hot spots of higher density offers the element of surprise and deception to mine warfare. Likewise, it increases the attacker's ability to create uncertainty, fear, and apprehension. An example of employing mines to isolate the objective and hinder the enemy is shown in figure 7 (page 25).²³

(3) Degrade Command and Control. High speed movements of armored vehicles require detailed plans and schedules which can be upset by deployment of mines. A few major countermobility measures or many minor disruptions give promise of overloading fragile command and control links. Inflexibility in the Warsaw Pact's command and control systems

keep them from reacting rapidly and decisively to unexpected situations. Therefore, some enemy delay and disruption could result for the maneuver force commander.

(4) Develop Targets for other Weapons. Employing minefields in great depth to serve as obstacles or to enhance other obstacles generates enemy concentrations of combat and combat support vehicles. Specific targeting of areas for mine emplacements to achieve this effect would provide opportunities on the use of scatterable mines suitable for discrete destruction.

These and similar variations may be used against the enemy in offensive warfare to support the MAGTF commander's tactical operation and enhance his probability of success.



CHAPTER III

DEFENSIVE OPERATIONS

General Activities

This chapter covers employment of the MAGTF in defense of the force beachhead (FBH) where control of the area is essential for follow-on forces. It is not an all inclusive treatise on defensive combat techniques. It is, instead, intended to emphasize concepts and to offer techniques which will allow the most efficient employment of the MAGTF against an enemy which most likely will be mechanized.

Principal Events

A. The objective of the defense is to destroy the enemy's cohesiveness and his capability to function as a combined-arms force. To accomplish this task all efforts must be directed toward the selective destruction of:

- o Antiaircraft weapons and artillery.
- o Command and control facilities and systems.
- o Infantry units operating in coordination with tanks.
- o Combat service support elements.²⁵

B. The principles of mass, maneuver, and economy of force must be emphasized when defending against an enemy attack.

C. The defensive unit must be prepared to conduct a phased defense of the FBH, keeping three principles in mind.

- o Identify the enemy attack as early as possible.

- o Coordinate all engineer efforts throughout the forward defense areas to ensure the most effective use of terrain and obstacles to canalize and delay the enemy's movement in attack.
- o Selectively destroy priority targets at extended ranges from the defensive positions.

D. Deceive the enemy concerning position of strong point defenses so as to cause premature commitment of his forces. Cause the enemy to mass and commit his forces in the assault short of the defensive lines. This will allow time to make maximum use of predetermined strong points and employ the counterattack force.

E. Defeat the enemy's attacking force with a strong combined counterattack force. Be prepared to fight a numerically superior force. Avoid any battle of attrition; key on maneuver; seek to inflict selective destruction. Employ the counterattack force in a bold offensive manner against the attacking force.²⁶

Discussion of Maneuver Operations

The traditional position defense employed by Marine Corps forces emphasizes the retention of specific terrain—for example, the Khe Sanh complex in Vietnam. This approach employs the majority of combat power in forward positions, using the remaining units in a relatively weak reserve.

The maneuver defense, on the other hand, emphasizes destruction of the enemy through maneuver by a strong mobile reserve. It is as important for the defender to maneuver the attacker until he is off balance as it is for the defender to maneuver his own counterattack force. Specific terrain retention is of secondary importance in this type of

defense. Thus, only minimal amount of combat power is placed in the forward defensive positions, to canalize or delay the enemy, toward the bulk of the defensive force. Maneuver forces normally possess significant combat power, therefore the mobile defense should be the rule rather than the exception during operations where terrain retention is secondary and sufficient maneuver areas exists.

The MAGTF's defense of the FBH incorporates aspects of both position and maneuver defenses. Control of terrain is essential for the security of the FBH, so sufficient combat power must be deployed forward to at least engage an attacking force. It would be tactically unwise to place the bulk of forces in a tight perimeter around a formidable anti-tank barrier, which would then become an obvious target for NBC weapons.

When planning defensive operations, MAGTF commanders must address the Warsaw Pact threat tactics. Their strategy is to take advantage of superior combat power, to use mass, and to create momentum in order to weaken their enemy and break through defensive lines. They attempt to do this by echeloning their forces to provide a constant wave of troops and equipment to attack the defenders.

Concurrent battles must be fought. Defensive forces must engage the enemy's assaulting forces and, at the same time, strike deeper at those forces to influence future operations. For the MAGTF commander to conduct concurrent battles, the maneuver force must be able to do the following:

- o See deep into the battlefield.
- o Conduct concurrent and deep battles.
- o Maneuver combat power as required.
- o Protect and sustain the defensive force.²⁷

Engineer Concepts

The same DSC engineers and reconnaissance forces that were inserted prior to D-day now serves as the deep eyes of the MAGTF commander to augment his early warning assets. These forces attempt to exploit the terrain to increase the combat effectiveness of the maneuver force by enhancing mobility and by taking countermobility measures against the enemy. In addition, the DSC forces must perform the following:

- o Provide early warning of advancing enemy forces.
- o Identify routes of mobility and countermobility.
- o Request, emplace, and adjust artillery RAAMS and ADAM rounds.
- o Selectively place and employ demolitions to create obstacles.

Principles of Engineers Employment

A. The MAGTF commander must realize that engineer support cannot be equally strong across the entire defensive front. Therefore, early identification of the enemy will improve the opportunity for success. When commanders (with engineer's advice) have determined the placement of strong-point defenses, combat engineer efforts must be directed toward canalizing the enemy into these strong-points. Combat engineers must simultaneously direct efforts toward creating obstacles which will deny the enemy free access to move toward more weakly defended areas within the defensive perimeter.

B. In a deliberate defense using existing obstacles (augmented with man-made obstacles as required) will be essential for the successful movement of defensive forces. Obstacles must be placed where they will improve the effectiveness of friendly antitank fire by canalizing the enemy into preplanned combat strips.

C. Obstacles must be placed in depth, starting from the forward front (FEBA) and moving rearward toward the FLOT. Each obstacle must cause the enemy to employ different breaching techniques and equipment. Scatterable mines that are emplaced as obstacles along roads, trails, flat areas and small hills will maneuver the enemy in predictable areas and directions.

D. Engineers operating with the forward elements of the maneuver force must provide information that supports the overall defensive plan. Common tasks for engineers include:

- (1) Aiding in preparation of defensive positions, weapon emplacements, and field fortifications.
- (2) Strengthening any existing major obstacles and barriers, and construction of new ones.
- (3) Installing and planning for additional minefields.
- (4) Maintaining and repairing existing roads and probable counterattack routes.
- (5) Providing technical assistance in the erection of wire entanglements, roadblocks and other obstacles for tactical units.
- (6) Preparing demolition charges for countermobility operations in critical areas in support of obstacles and barriers.

E. Artillery and air assets should be used to place seed mines in areas not accessible to combat engineers—rear area gaps and lanes, positions previously breached by the enemy. Such assets should force the hasty deployment of the enemy. Because of the inherent flexibility of scatterable mines, the most effective position for a potential minefield is in the "ready rack" of a artillery piece or on an awaiting aircraft. Timely emplacement is very important.²⁸

Employment of Scatterable Mines

In an effort to break away from mine warfare doctrine and terminology in defensive operation, an example of a conventional minefield is useful. The geometric characteristic and typical minefield design of the "old" ground forces doctrine (figure 8--page 34) defines boundaries, width of field, and precise mine groupings. This minefield presents an opportunity for the use of an impressive array of Warsaw Pact mine/countermine equipment--rollers, plows, and explosive line charges. When an enemy encounters the first mine in a conventional geometric field, he has a good estimate of how far he has to clear before he emerges from the danger area.²⁹

In the scatterable mine minefield, a "hot spot" of relative high density would impose about the same probability of kill upon an intruder. This is illustrated in figure 9 (page 34) to the same scale. The dots represent mines randomly emplaced over the entire area. If hand emplaced, the minefield in figure 8 would require about 300 manhours; the field in figure 9 could be emplaced in minutes with air or artillery delivery systems. This mining would provide the total effect of a traditional minefield 10 times its size. Additionally, there would be some chance of mines encounter beyond the initial field itself.³⁰

A broader scale view of a scatterable mine minefield is depicted in figure 10 (page 35). A mix of mine types is used to improve the delaying potential of the terrain:

- o At point 1, wide-area or route-traffic mines are employed to force vehicles into woods where preplanned artillery strikes can further delay their mobility.

- o At point 2, a bridge is destroyed. Mines are concentrated to retard repairs and cause destruction of engineer equipment or bypassing vehicles.
- o At point 3, a potential fording site is rendered inaccessible, thereby causing further delays for the enemy forces.³¹

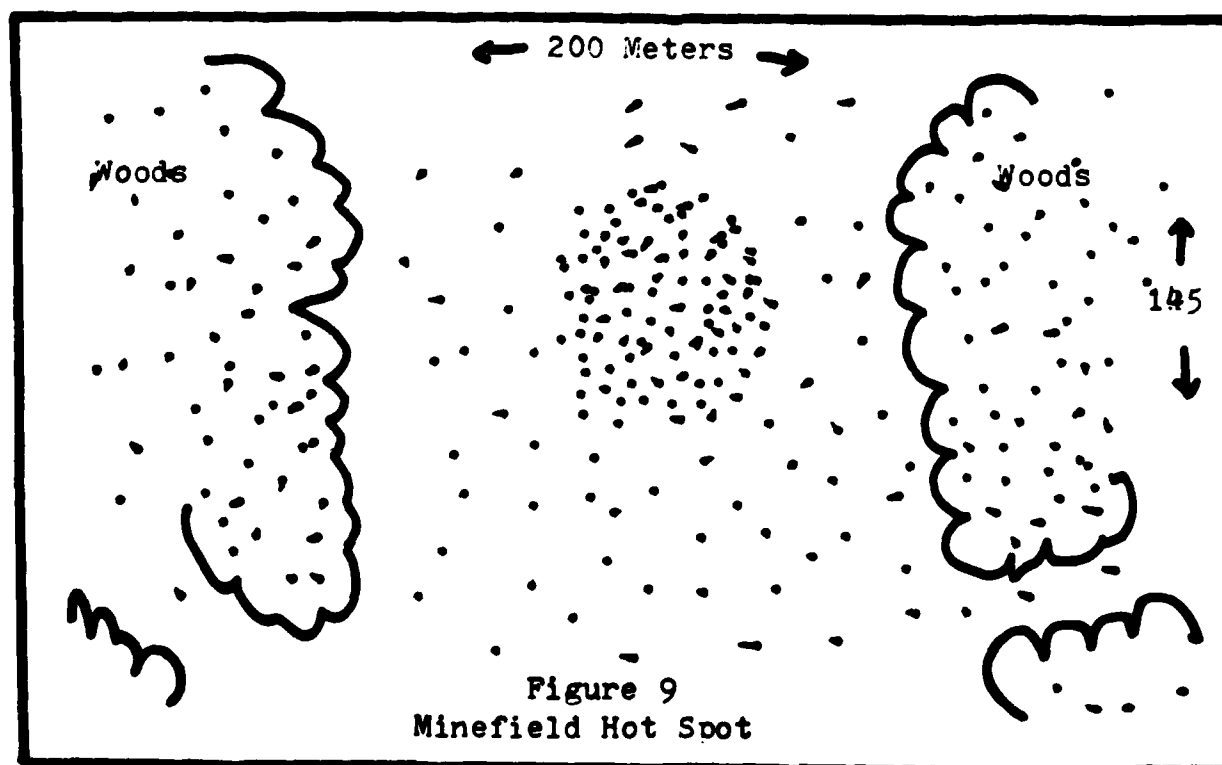
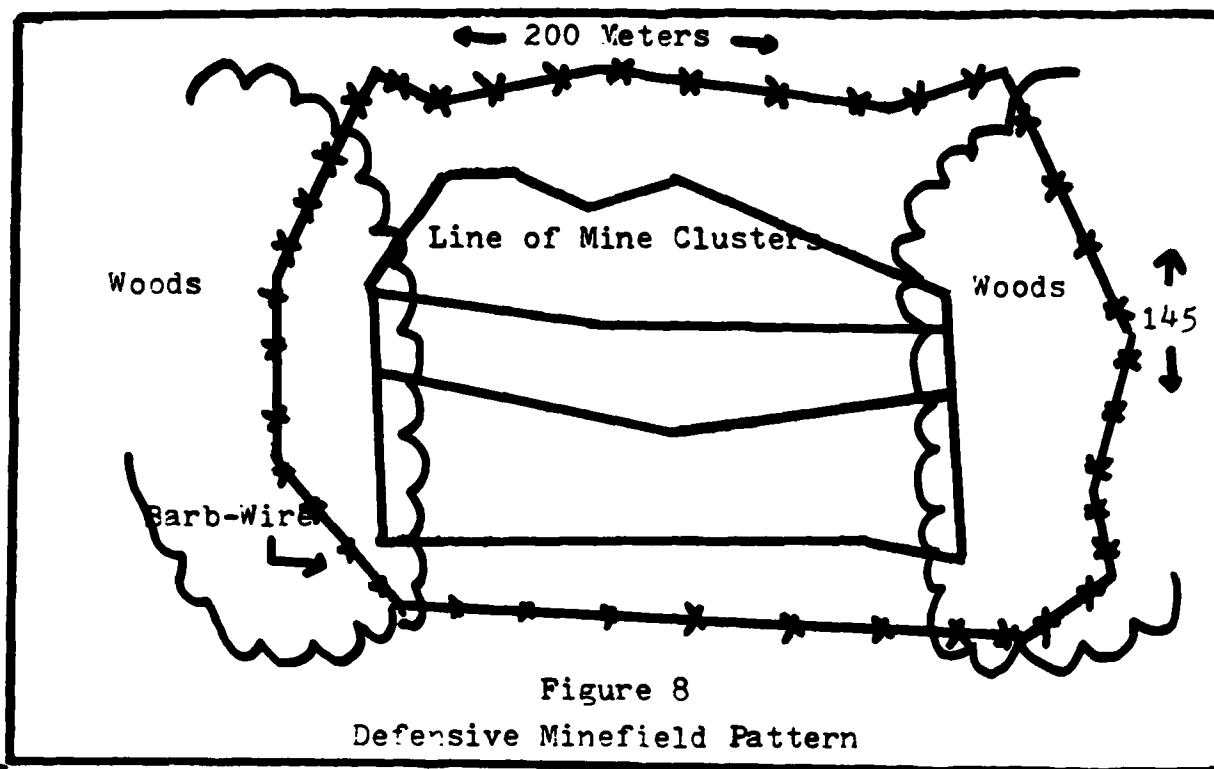
Throughout the area randomly placed scatterable mines are represented by dots. Each time an enemy encounters a mine there is a good chance of a kill. With each encounter the enemy commander must decide whether to adopt countermeasures, continue and take his losses, or attempt to redeploy his forces. He is never sure if he is in a "hot spot", and the lack of predictable geometry prevents him from determining how deep his force is in the mined area.

Mines not only threaten the physical destruction of vehicles and personnel, but also they introduce the uncertainty factor and thus produce grave psychological effects. The cumulative effects of such "small" factors can yield significant results, causing the enemy commander to increase radio usage, complicating his command and control, and possibly revealing something of his attacking formation, strength, or intentions.³²

In Warsaw Pact doctrine, to support the attacker's breakthrough, artillery units from several divisions move forward into a single motorized infantry division's zone. If this combined unit is allowed to get into a firing position, it represents tremendous attacking firepower on the defender's position. Furthermore it is likely to be protected by an impressive amount of air defense assets. So tactical air strikes on it will be costly and perhaps too late. Minefields emplaced on likely routes of advances interfere with movement of self-propelled artillery and of tactical troops, thereby delaying reserve forces and diluting the

overall power of the attacking force.³³ Such an example of the use of scatterable mines on attacking troops formations is depicted in figure 11 (page 36).

The use of scatterable mines in support of the defense is essential to the MAGTF commander. Some destructive capabilities of these mines can be measured and predicted. Other effects--disruptive, delaying, and psychological--are not always measurable. However, when their total effects are combined, they become another formidable weapon in the MAGTF commander's arsenal, increasing his chances of success.



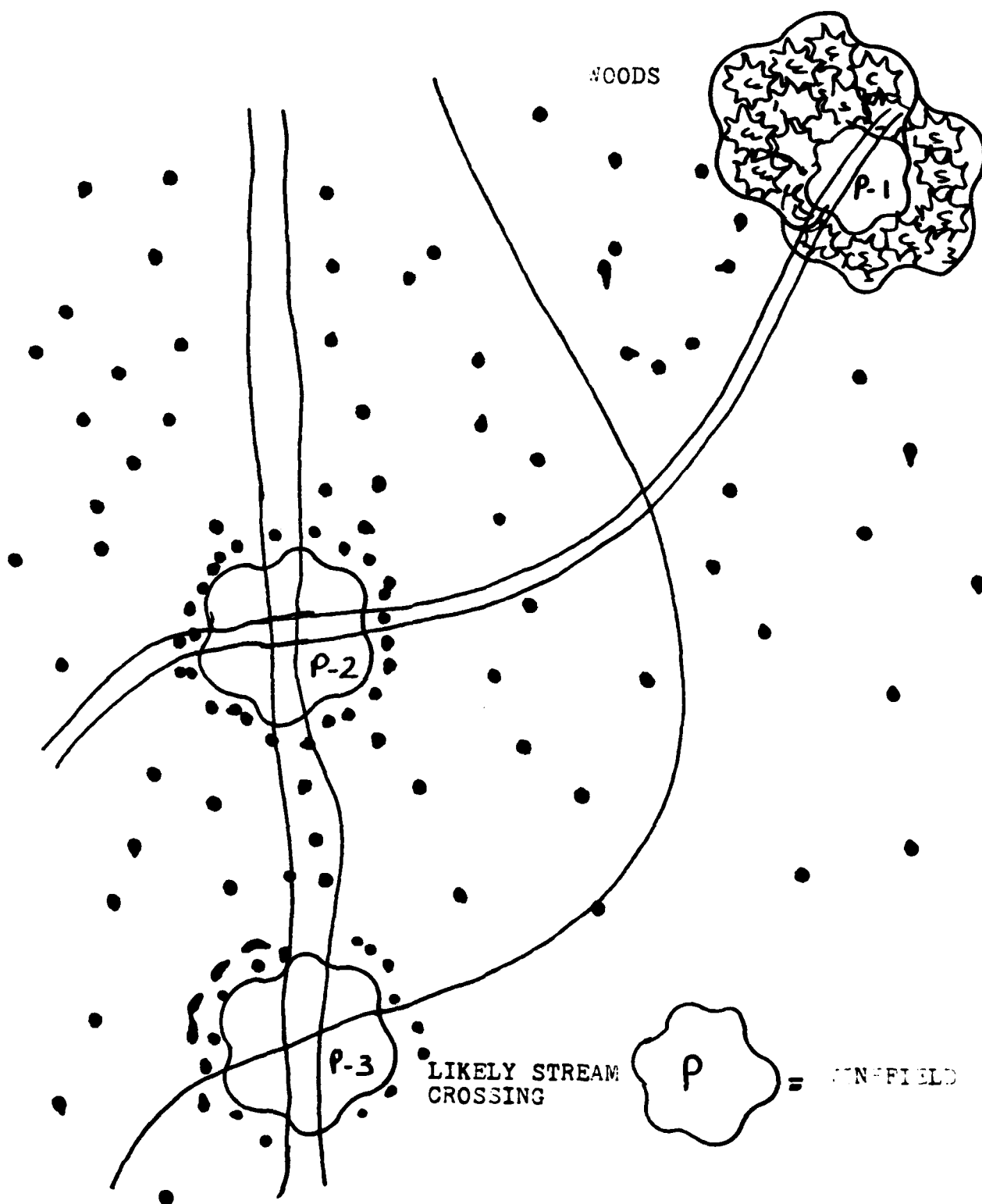
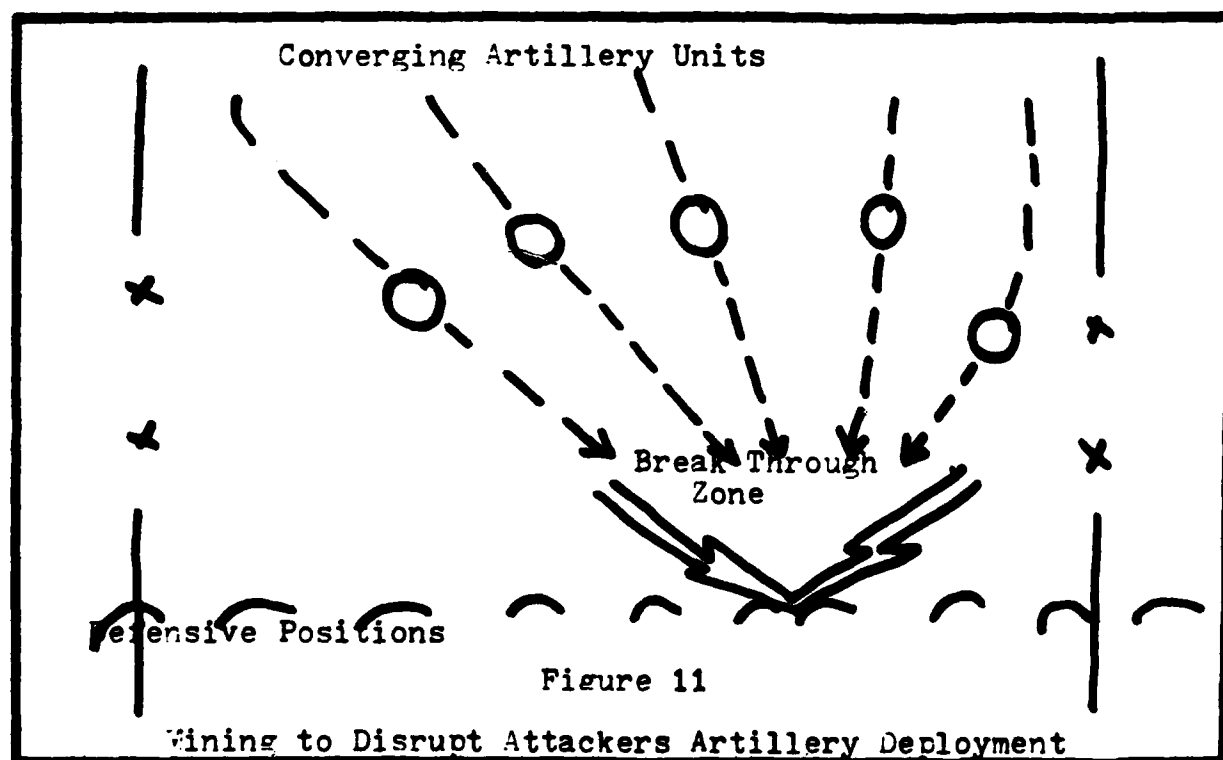


Figure 10
Minefield Emplacement Scheme



CHAPTER IV

CONCLUSION

Marine Corps Air Ground Task Forces must anticipate combat against forces well-trained in Warsaw Pact doctrine. These forces will be superior in number, employ an abundance of equipment, and be supported by readily available logistical support. Even though outnumbered, Marine Corps Air Ground Task Forces utilizing maneuver warfare tactics and employing combat engineers can exploit the enemy's vulnerabilities and win decisively.

Using modern technology and appropriate contemporary doctrine, combat engineers can play a crucial role not only in maneuver warfare but also in every style of ground warfare. If the tactical commander wants freedom of movement for his maneuver force, he will certainly call on his combat engineers to clear such obstacles as ditches and mine-fields and to install bridges or rafts across both wet and dry gaps. If the maneuver force commander wants to restrict ground mobility of the enemy forces, again he will call upon combat engineers to install obstacles, crater roads, destroy bridges, or advise on the emplacement of scatterable mines.

Therefore, it is apparent that combat engineers are crucial to the success of maneuver warfare tactics. They should be tactically deployed forward of the front line of own troops. Commanders need their support, tactical efficiency, and abilities to alter the battlefield terrain to enhance prospects for success in both offensive and defensive combat operations.

ENDNOTES

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11. Ibid., p. 5.
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18. Ibid., p. 35.

19. Major J. D. Burke, "Maneuver Warfare and The MAGTF," Marine Corps Gazette, (September 1982), p. 68.

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